UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/779,283	02/08/2001	William H. Gong	37,248-01	6597

7590 09/30/2002

BP Amoco Corporation
Attn: Docket Clerk, Law Department
200 E. Randolph Drive
P.O. Box 87703, Mail Code 2207A
Chicago, IL 60680-0703

EXAMINER
GRIFFIN, WALTER DEAN

ART UNIT	PAPER NUMBER
1764	3

DATE MAILED: 09/30/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/779,283	Applicant(s) GONG ET AL.	
	Examiner Walter D. Griffin	Art Unit 1764	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 September 2001* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *08 February 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *2* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Specification

The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

Claims 14 and 20 are objected to because of the following informalities: In the second line of claim 14, the word "portion" is misspelled. In the second line of claim 20, the word "consists" should apparently be "consisting". Appropriate correction is required.

Claim Rejections - 35 USC § 112

Claims 12, 13, and 15-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 12 and 13 are indefinite because it is unclear if the base referred to in each claim is the neutralizing agent of claim 11 or is in addition to the neutralizing agent in claim 11.

Claims 15-20 are indefinite because the expression "the high-boiling fraction" in the last line of claim 15 lacks proper antecedent basis. The expression should apparently be "the high-boiling part".

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 5, and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by EP 0252606.

The EP reference discloses a process for the production of a fuel. The process comprises contacting a hydrocarbon fraction with oxygen in the presence of a soluble catalyst system to produce an oxidized product with improved characteristics including improved cetane number. The hydrocarbon fractions are middle distillates that would necessarily have API gravities within the claimed range and they may contain sulfur or nitrogen. The soluble catalyst contains metals as claimed. The oxidized product is treated by separating an aqueous portion from the organic portion. The hydrocarbon to be oxidized may be hydrotreated prior to oxidation by contacting the hydrocarbon with a supported Group VI and/or VIII metal catalyst at hydrotreating conditions. The oxidation process may treat the entire hydrocarbon stream or a fraction of it. See page 3, lines 1-35; page 4, lines 41-58; page 5, lines 1-32; page 20, lines 1-13; and the examples.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 4, 6, and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 0252606.

The EP reference discloses a process for the production of a fuel. The process comprises contacting a hydrocarbon fraction with oxygen in the presence of a soluble catalyst system to produce an oxidized product with improved characteristics including improved cetane number. The hydrocarbon fractions are middle distillates that would necessarily have API gravities within the claimed range and they may contain sulfur or nitrogen. The soluble catalyst contains metals as claimed. The oxidized product is treated by separating an aqueous portion from the organic portion. The hydrocarbon to be oxidized may be hydrotreated prior to oxidation by contacting the hydrocarbon with a supported Group VI and/or VIII metal catalyst at hydrotreating

conditions. The oxidation process may treat the entire hydrocarbon stream or a fraction of it. See page 3, lines 1-35; page 4, lines 41-58; page 5, lines 1-32; page 20, lines 1-13; and the examples.

The EP reference does not disclose recycling the catalyst as in claim 4, does not disclose the percent by weight of metal in the hydrotreating catalyst as in claim 6, and does not disclose the partitioning of fractions of claim 7.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of the EP reference by recycling the catalyst because the economics of the process will be improved.

It also would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of the EP reference by utilizing amounts of metals in the hydrotreating catalyst as claimed because suitable catalysts are well known to those skilled in the art and therefore one would utilize a catalyst having metal amounts that result in the desired hydrotreating effect.

It also would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of the EP reference by partitioning fractions as claimed because the reference discloses that only a fraction of the feed may be treated by oxidizing. Therefore, one of skill in the art would choose the fractions that would result in the desired product.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over EP 0252606 in view of Schultz et al. (US 2,365,220).

As discussed above, the EP reference does not disclose treating the oxidized product with a neutralizing agent.

The Schultz reference discloses the need for neutralizing acids in oxidized hydrocarbon streams. The neutralizing agent may be an alkali metal hydroxide. See page 6, right column, lines 23-54.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the EP process by neutralizing the oxidized product as suggested by Schultz because a stable, non-acidic product will result.

Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 0252606 in view of Serres et al. (US 3,150,172).

As discussed above, the EP reference does not disclose catalysts having the formula as in claims 9 and 10.

The Serres reference discloses that metal acetylacetonates are effective hydrocarbon oxidation catalysts. These compounds have the same structure as claimed. See col. 4, line 50 through col. 5, line 2.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of the EP reference by utilizing the catalysts disclosed by Serres because these catalysts are effective in hydrocarbon oxidation processes and therefore would be expected to be effective in the EP process.

Claims 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 0252606 in view of Schultz et al. (US 2,365,220).

As discussed above, the EP reference does not disclose the partitioning of fractions and does not disclose treating the oxidized product with a neutralizing agent.

The Schultz reference discloses the need for neutralizing acids in oxidized hydrocarbon streams. The neutralizing agent may be an alkali metal hydroxide. See page 6, right column, lines 23-54.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the EP process by neutralizing the oxidized product as suggested by Schultz because a stable, non-acidic product will result.

It also would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of the EP reference by partitioning fractions as claimed because the reference discloses that only a fraction of the feed may be treated by oxidizing. Therefore, one of skill in the art would choose the fractions that would result in the desired product.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-20 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-20 of copending Application No. 09/779286 in view of EP 0252606.

Each set of claims discloses a hydrocarbon oxidation process. The claims of 09/779286 do not include a soluble catalyst system.

The EP reference discloses that soluble and heterogeneous catalysts are equivalent in hydrocarbon oxidation processes. See page 5, lines 19-32.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the claims of 09/779286 by utilizing a soluble catalyst as suggested by the EP reference because soluble catalysts are shown to be equivalent to the claimed heterogeneous catalysts.

This is a provisional obviousness-type double patenting rejection.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art not relied upon discloses oxidation processes.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter D. Griffin whose telephone number is 703-305-3774. The examiner can normally be reached on Monday-Friday 6:30 to 4:00 with alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marian Knode can be reached on 703-308-4311. The fax phone numbers for the

organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0651.

Walter D. Griffin
Primary Examiner
Art Unit 1764

WG
September 17, 2002